

REMARKS

This Amendment is submitted in response to the final Office Action dated April 24, 2002. Claims 7-12 are canceled herein and replaced with new claims 13-18 that more clearly define the invention. All amendments find support in the specification, drawings and original claims. Claims 13-18 remain pending in the application. Applicants respectfully request reconsideration and allowance of all pending claims in view of the above amendments and the following remarks.

Rejections Under 35 U.S.C. § 103

The Examiner rejected claims 7-12 under 35 U.S.C. § 103(a) as obvious in view of, and therefore unpatentable over, various combinations of three references: U.S. Patent No. 5,394,054 to Chen ("Chen"), U.S. Patent No. 5,990,610 to Matsumoto et al ("Matsumoto"), and U.S. Patent No. 5,077,498 to Odenthal ("Odenthal").

According to the Examiner, Chen discloses a cathode ray tube 78 comprising a neck portion, a funnel portion, a plurality of conductive stem pins 36 at the end of the neck portion, and an electron gun 60 positioned in the neck. The Examiner asserts that the electron gun 60 includes a triode for forming the electron beam 73 and a plurality of electrodes (grids G3, G4, and G5) for focusing electron beam, with the second accelerator electrode (G3 grid 68) being a cylindrical element smaller in diameter than the neck and connected to anode potential V_A ; the focus electrode (G4 grid 70) being coupled to and charged by a focus voltage V_F , where V_F is less than V_A ; and the final accelerator electrode (G5 grid 72) comprising a conductive coating 46 disposed on the inner surface of the neck and funnel of the glass envelope connected to a high anode voltage V_A via the anode button 44 in the neck. The Examiner concludes that Chen

pin and the accelerator electrode connected to an isolated stem pin. According to the Examiner, however, Matsumoto discloses that a plurality of stem pins can include a high voltage stem pin 3B and several lower voltage stem pins 3A and 3C. The Examiner concludes it would have been obvious to one having ordinary skill in the art at the time of the invention to connect the accelerating electrode to high V_A through the isolated high voltage stem pin, and the focusing electrode to a focus voltage V_F through the low voltage stem pin.

Finally, according to the Examiner, Odenthal discloses that the high voltage potential should be equal to 12 kilovolts. The Examiner concludes that it would have been obvious to one of ordinary skill in the art at the time of the invention to specify the anode potential of the CRT of Chen equal to 12 kilovolts, as suggested by Odenthal.

As to claim 12, the Examiner asserts that Chen and Matsumoto disclose all the claim limitations except the second and the accelerator electrode being connected to an anode potential of 12 kilovolts. However, the Examiner asserts that Odenthal discloses that the second electrode and the accelerating electrode should be connected to a 12 kilovolt source through an anode button for focusing the electron beam with reduced spherical aberration. The Examiner concludes that it would have been obvious to include the anode potential of 12 kilovolts as disclosed by Odenthal for focusing the electron beam towards the target.

Applicant respectfully traverses the Examiner's rejections. To establish a *prima facie* case of obviousness, three criteria must be met: (1) the prior art references must teach or suggest all the claim limitations; (2) some suggestion or motivation to combine the references must be found in the prior art; and (3) there must be a reasonable expectation of success. MPEP § 2143. As further explained below, a *prima facie* case of obviousness has not been established because criteria (1) and (2) have not been met.

New claim 13 recites a CRT comprising, among other things, "a first lens comprising a second accelerator electrode including a conductive cylindrical element smaller in diameter than the neck, which is connected to an external potential via the isolated high voltage stem pin, and a focus electrode connected to a focus potential through one of the low voltage stem pins" and "a second lens comprising the focus electrode and a final accelerator electrode comprising a

electrode is connected to anode potential through an anode button in the neck." Chen does not teach, disclose, or suggest such a combination. Instead, Chen teaches that, after the beam 73 leaves the triode, the beam is focused first between the G3 grid 68 and the G4 grid 70, and again between the G4 grid 70 and the G5 grid 72. In other words, the difference in potential between the G3 grid 68 and the G4 grid 70 forms a first lens, and the difference in potential between the G4 grid 70 and the G5 grid 72 forms a second lens. Chen discloses that the function of the internal coating 46 is to provide the anode voltage V_A to the CRT's screen 50 (col. 2, lines 32-

34), but does not disclose, teach or suggest that the internal conductive coating 46 operates in conjunction with any other electrode to focus the beam; thus, the CRT of Chen cannot be considered a combination including "a second lens comprising the focus electrode and a final accelerator electrode comprising a continuous internal conductive coating on the neck and the funnel, wherein the final accelerator electrode is connected to anode potential through an anode button in the neck." Matsumoto discloses only a particular way of arranging pins in a connector; it discloses nothing related to how focusing is carried out in an einzel focusing lens. Thus, Chen and Matsumoto taken together cannot disclose, teach or suggest all the limitations in the claim.

Not only do Chen and Matsumoto fail to disclose every element and limitation of the claim, but also neither reference teaches, suggests, or otherwise motivates the combination attempted by the Examiner. Chen includes no suggestion that the conductive coating 46 is or can be used for any purpose relating to the focusing of the electron beam 73 and, in fact, Chen teaches away from the present invention. Chen teaches that all focusing of the electron beam 73 is done by the G3 grid 68, the G4 grid 70, and the G5 grid 72. Chen also teaches that the conductive coating 46 should at the same anode potential V_A as the G5 grid 72 (Fig. 3; col. 4, lines 61-65), meaning that there is no potential difference between the G5 grid 72 and the conductive coating 46, and that these two elements cannot therefore form a lens or perform any focusing. As discussed above, Matsumoto discloses only a particular way of arranging pins in a connector; nothing in Matsumoto is related to how focusing is carried out in an einzel focusing lens, and thus Matsumoto cannot suggest anything relating to the particular use of electrodes within a CRT. Thus, the combination of Chen and Matsumoto cannot suggest the combination attempted by the Examiner and therefore cannot teach, suggest, or otherwise motivate a combination including "a second lens comprising the focus electrode and a final accelerator electrode comprising a continuous internal conductive coating on the neck and the funnel, wherein the final accelerator electrode is connected to anode potential through an anode button in the neck."

Regarding claims 14 and 15, if an independent claim is non-obvious under 35 U.S.C. § 103, then any claim depending therefrom is also non-obvious. MPEP § 2143.03; *In re Fine*, 837 F.2d 1071 (Fed. Cir. 1988). As discussed above, claim 13 is in condition for allowance. Applicant therefore respectfully submits that claims 14 and 15 are allowable by virtue of their

dependence on allowable claim 13, as well as by virtue of the features recited therein. Applicant thus respectfully requests withdrawal of the rejections and allowance of these claims.

Claims 16 and 18 both recite a CRT comprising, among other things, "a first lens comprising a second accelerator electrode including a conductive cylindrical element smaller in diameter than the neck, which is connected to an anode potential via the isolated high voltage stem pin, and a focus electrode connected to a focus potential through one of the low voltage stem pins," and "a second lens comprising the focus electrode and a final accelerator electrode comprising a continuous internal conductive coating on the neck and the funnel, wherein the final accelerator electrode is connected to anode potential through an anode button in the neck." As discussed above in connection with claim 13, none of the references relied upon in this Office Action teaches this limitation. Moreover, the references, whether taken alone or in combination, do not suggest, and in fact teach away from, the combination attempted by the Examiner. For these reasons, Applicant respectfully submits that claims 16 and 18 are in condition for allowance, and requests withdrawal of the rejection and allowance of the claim.

Regarding claim 17, if an independent claim is non-obvious under 35 U.S.C. § 103, then any claim depending therefrom is also non-obvious. MPEP § 2143.03; *In re Fine*, 837 F.2d 1071 (Fed. Cir. 1988). As discussed above, claim 16 is in condition for allowance. Applicant therefore respectfully submits that claim 17 is allowable by virtue of its dependence on allowable claim 16, as well as by virtue of the features recited therein. Applicant therefore respectfully requests withdrawal of the rejections and allowance of this claim.

Conclusion

Applicant respectfully requests reconsideration of the application in view of the above amendments and remarks. None of the cited references, alone or in any motivated combination, disclose, teach, or suggest what is recited in the independent claims. Thus, the independent claims are in condition for allowance. The dependent claims that depend directly or indirectly on these independent claims are likewise allowable based on at least the same reasons and based on the recitations contained in each dependent claim.

If the undersigned attorney has overlooked a teaching in any of the cited references that is relevant to allowance of the claims, the Examiner is requested to specifically point out where such teaching may be found. Further, if there are any informalities or questions that can be


addressed via telephone, the Examiner is encouraged to contact the undersigned attorney at (206) 292-8600.

Charge Deposit Account

Please charge our Deposit Account No. 02-2666 for any additional fee(s) that may be due in this matter, and please credit the same deposit account for any overpayment.

Respectfully submitted,

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